

Goals and Objectives Results

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY

The participants of the March Open House and the online mapping tool generally supported all of the project's goals and objectives and ranked the majority as "important" or "very important." Three goals and objectives, highlighted below, were weighted "very important" more heavily than the others.

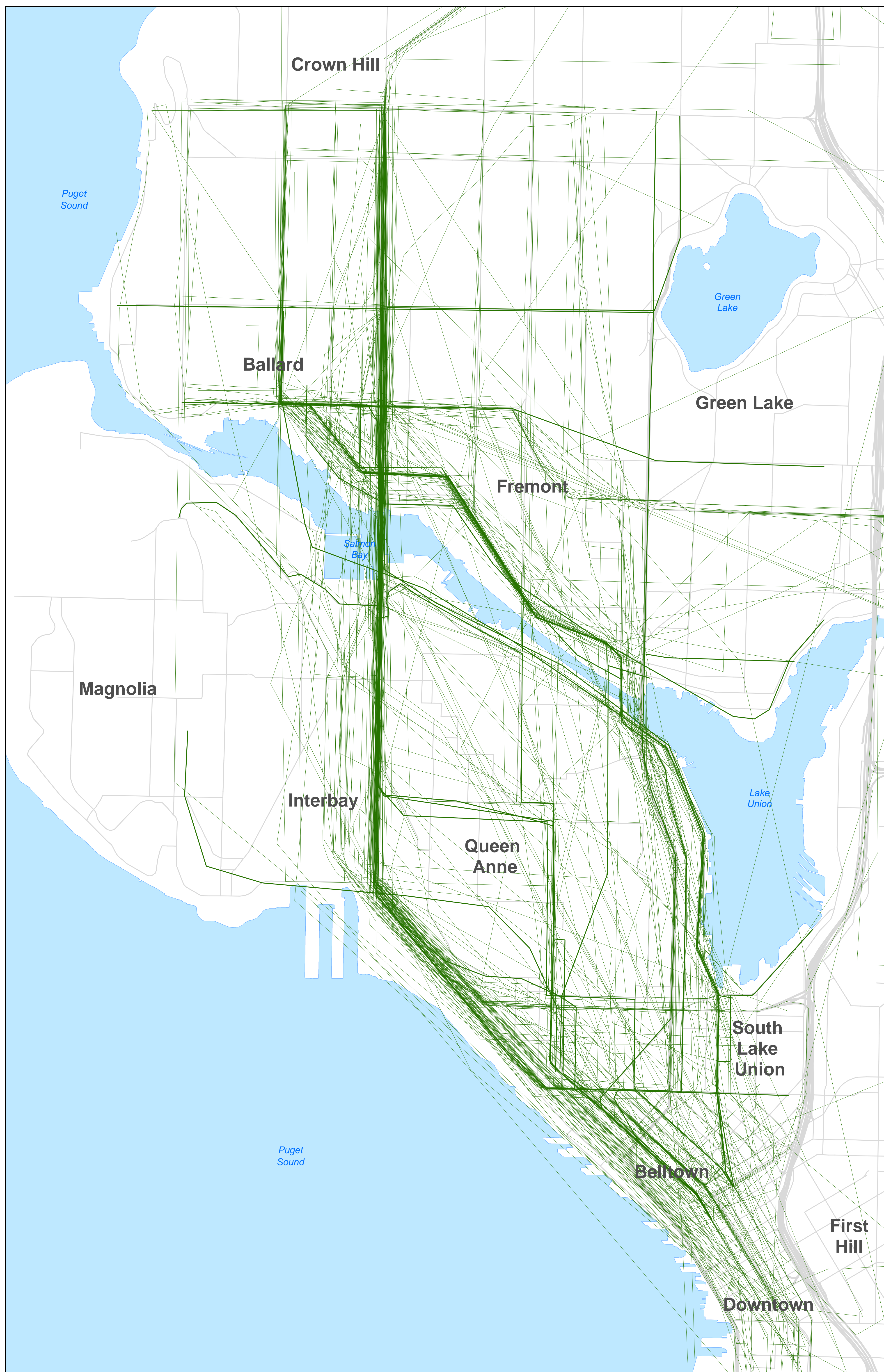
Goals and Objectives Ranking

Goal/Objective	Not Important	Somewhat Important	Important	Very Important
Increase transit ridership by providing services that are reliable, frequent and efficient	0%	2%	12%	86%
Improve mobility options for residents and businesses between Ballard and Downtown Seattle	1%	6%	9%	84%
Support sustainable urban growth	2%	9%	21%	68%
Improve connection to the regional transit system	3%	12%	22%	63%
Efficient use of public funding	2%	15%	29%	54%
Preserve and enhance the environment	1%	16%	31%	52%
Provide equitable access for residents and businesses	3%	16%	31%	50%

Routes Suggested Through Public Input

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY

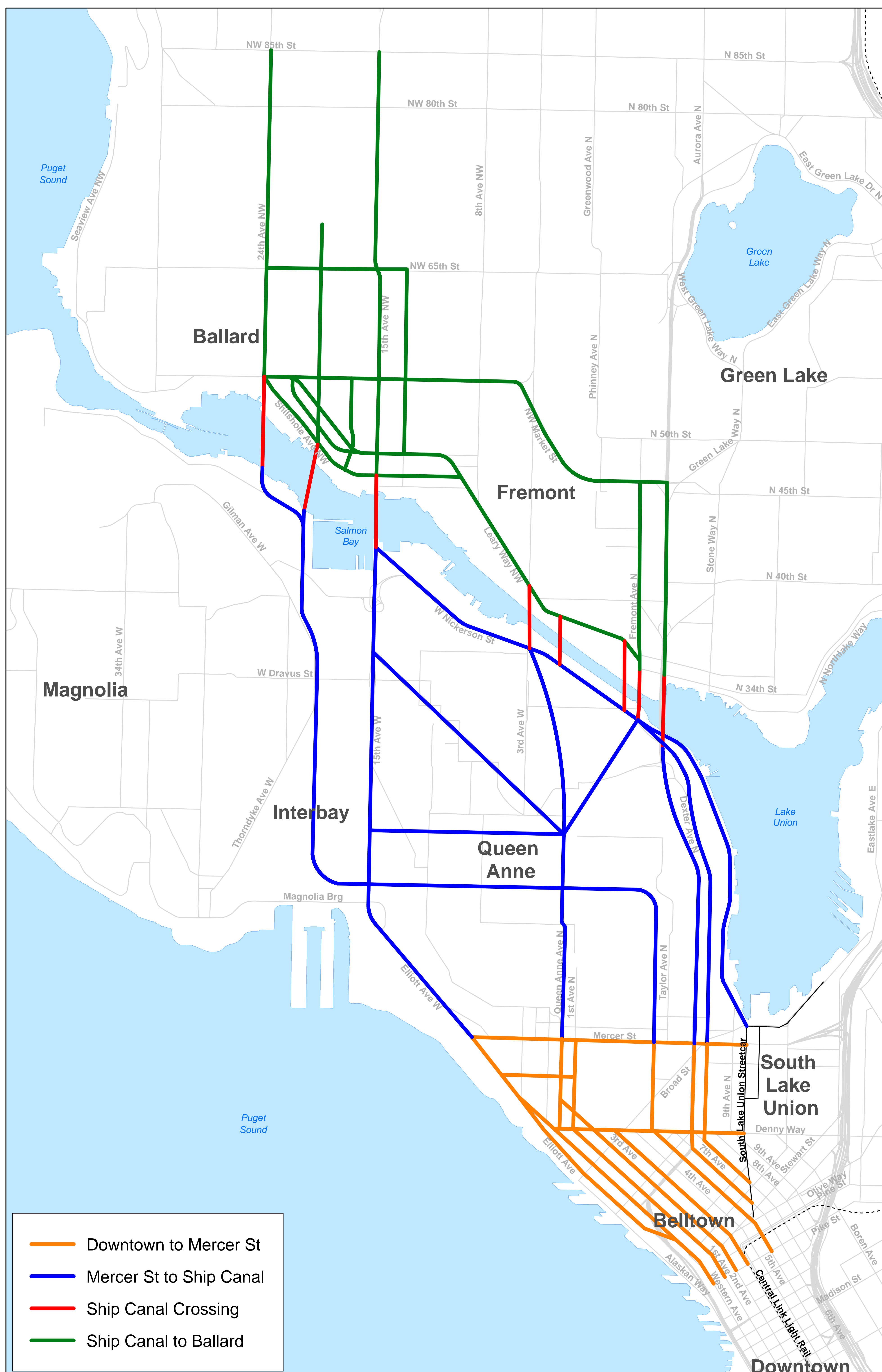
Nearly 150 people attended the open house on March 12, 2013, and nearly 270 people participated in an online interactive mapping tool. All the routes proposed by members of the public are shown below.



Initial Corridor Options

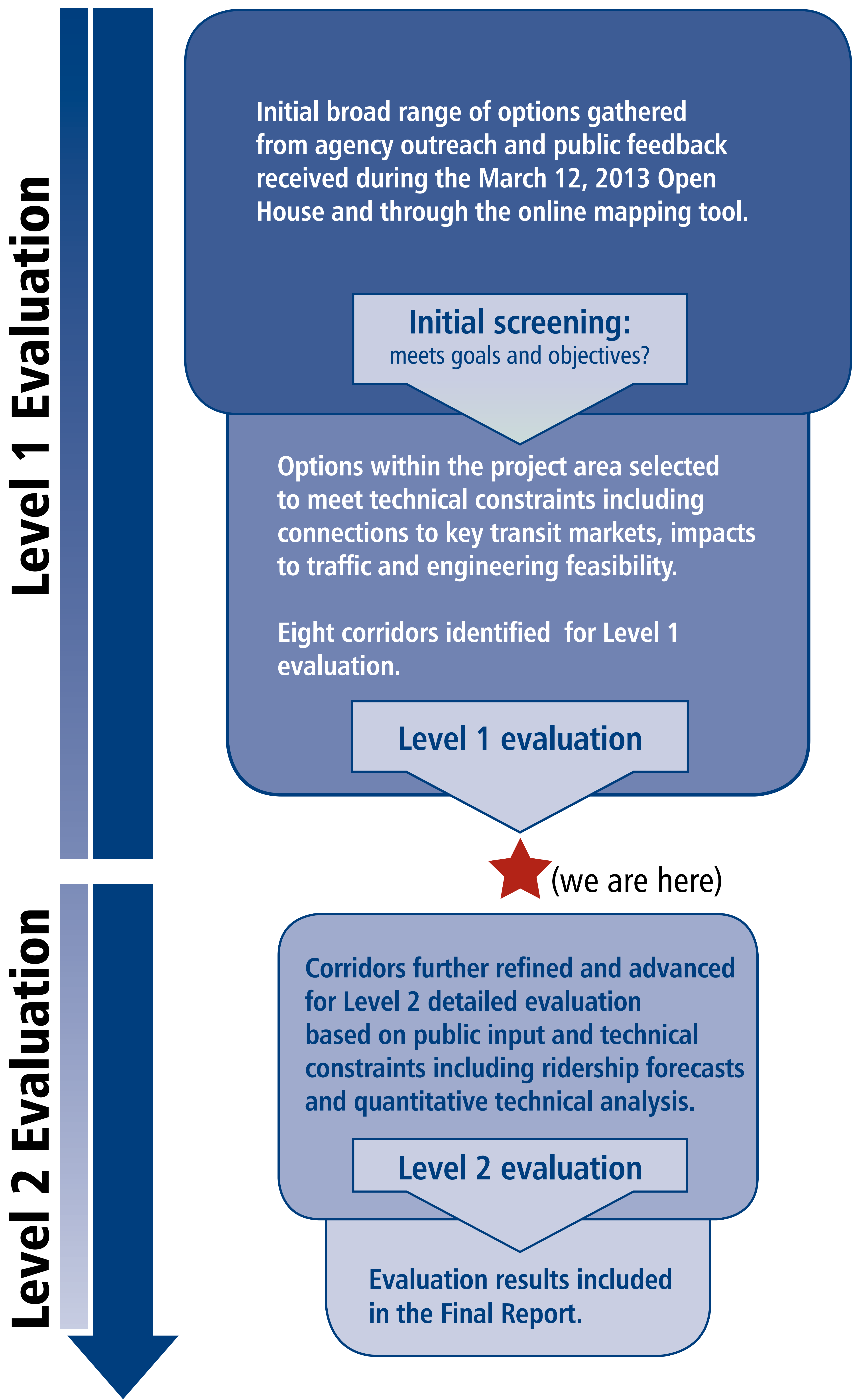
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The options suggested by participants of the March Open House and the online mapping tool were screened based on prioritization of the project's goals and objectives and to eliminate routes located outside of the project study area. The remaining options were then organized into four geographic segments for the purpose of further screening and identification of the Level 1 Corridors.



Screening Process and Criteria

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Factors to Keep in Mind

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Downtown Connection:

- Planned light rail extensions to Lynnwood and the East Side will increase train traffic in the Downtown Seattle Transit Tunnel (DSTT), leaving no room in the tunnel for a Ballard rail line to safely operate. If the Ballard rail line used a separate parallel tunnel to enter or exit Downtown Seattle, underground walkways could connect passengers to the DSTT.
- Surface street options are also being considered and will be coordinated with the Center City Connector Transit Study.

Ship Canal Crossing:

- A 70 ft movable bridge would reduce the number of openings required for passing ship traffic compared to the existing bridges.
- A fixed bridge will likely require 140 ft clearance above the water level and would not open for ship traffic.
- A tunnel (25 to 45 ft below the waterway) would not interfere with ship traffic.
- The existing Fremont Bridge is 31 ft above the water level and opens 15 times a day (on average).
- The existing Ballard Bridge is 44 ft above the water level and opens 12 times a day (on average).

Mode:

- Rapid Streetcar operates on surface streets with an extensive use of exclusive lanes, uses high levels of priority treatments to gain advantage over traffic and has wide spacing between stops.
- Light Rail operates principally in its own right-of-way on surface streets, in tunnels or on elevated tracks and provides fast connections with limited stops.



Corridor 1: Interbay West/New Bridge

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY

FEATURES AND SERVICE

Cost:

Market St to Downtown Seattle:
\$750 - \$1,000 M

85th St to Market St:
N/A

Peak Period Travel Time:

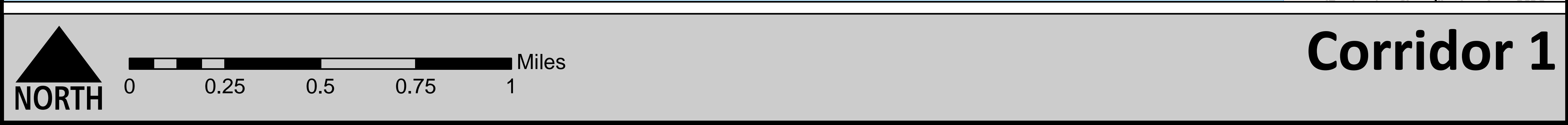
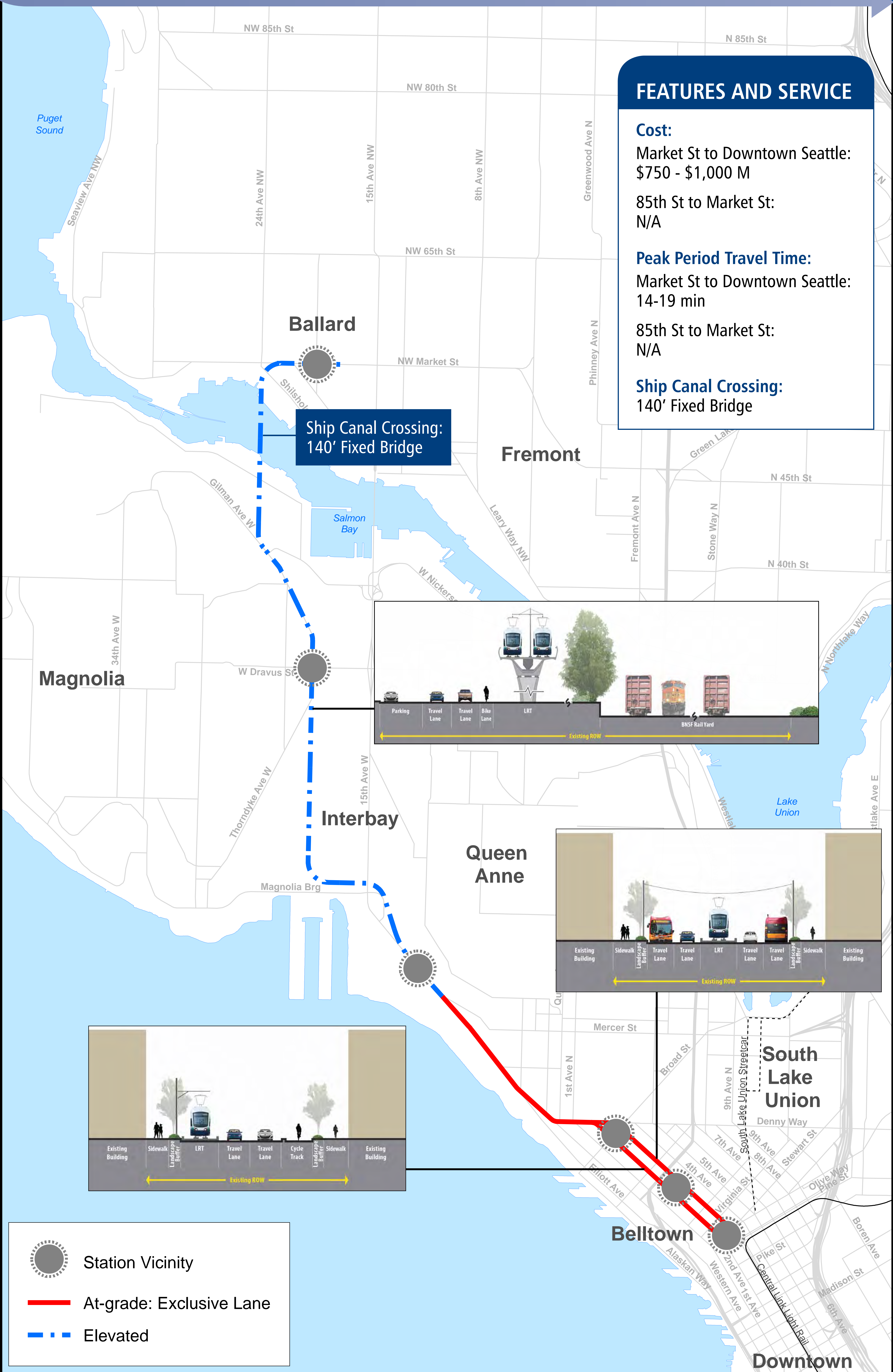
Market St to Downtown Seattle:
14-19 min

85th St to Market St:
N/A

Ship Canal Crossing:

140' Fixed Bridge

Ship Canal Crossing:
140' Fixed Bridge



Corridor 1

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY



BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY



Cost:

Market St to Downtown Seattle:
\$1,500 - \$2,000 M

85th St to Market St:
N/A

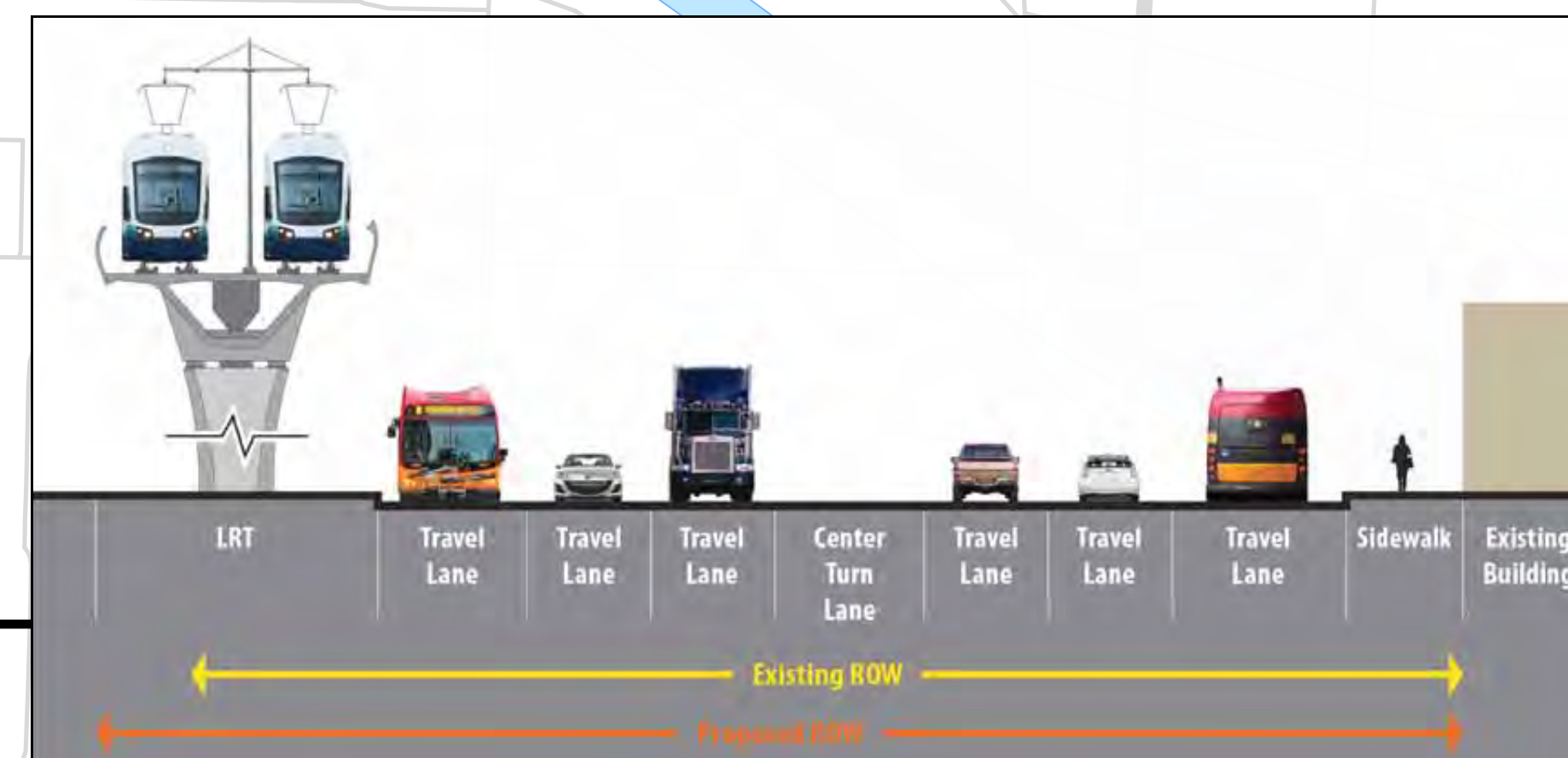
Peak Period Travel Time:

Market St to Downtown Seattle:
11-16 min

85th St to Market St:
N/A

Ship Canal Crossing:
140' Fixed Bridge

Ship Canal Crossing: 140' Fixed Bridge



Station Vicinity

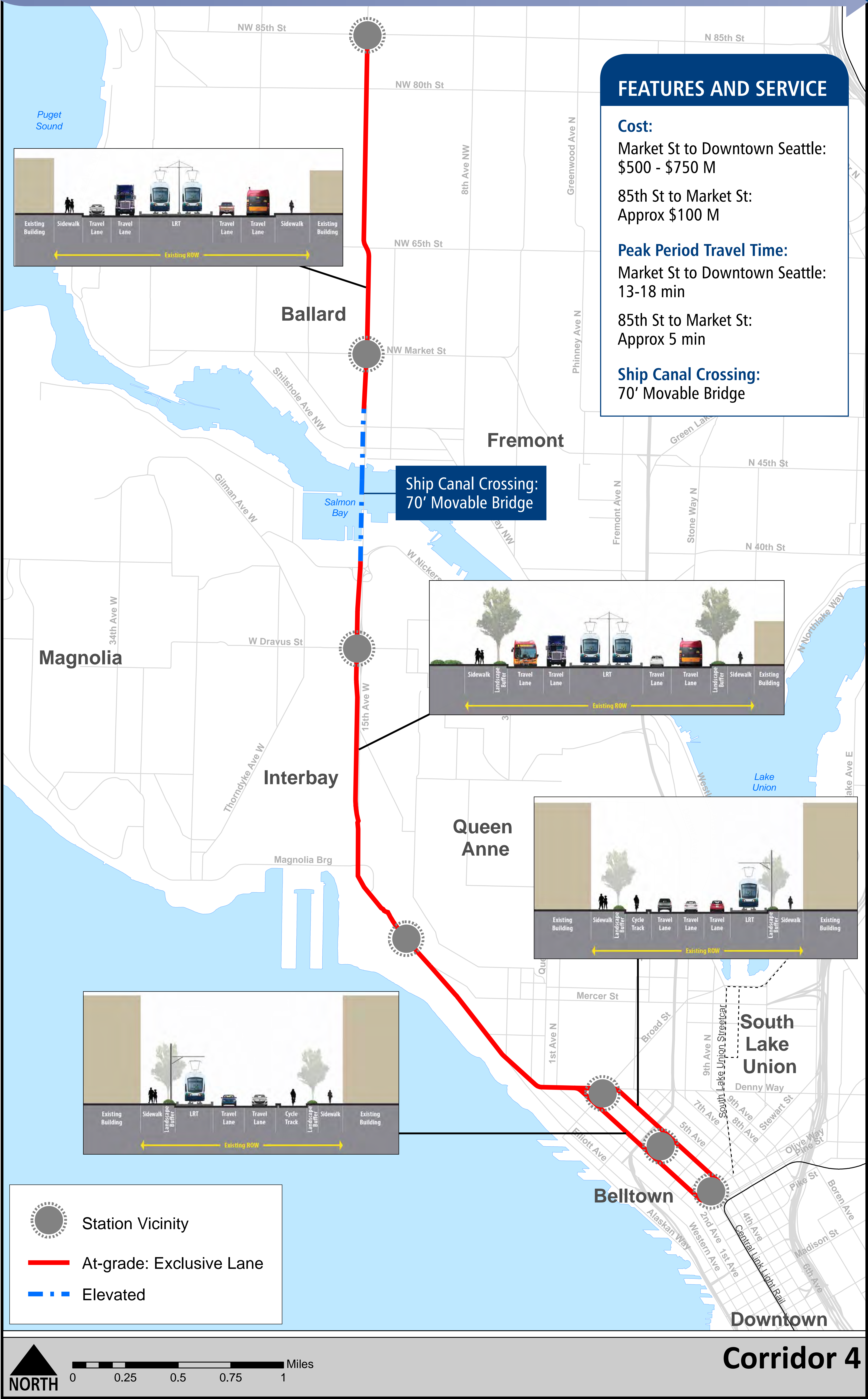
Elevated

Tunnel

Corridor 3

Corridor 4: 15th Avenue/At-grade

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY



BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY



Cost:

Market St to Downtown Seattle:
\$2,000 - \$2,500 M

85th St to Market St:
N/A

Peak Period Travel Time:

Market St to Downtown Seattle:
15-20 min

85th St to Market St:
N/A

Ship Canal Crossing: 70' Movable Bridge

Ship Canal Crossing: 70' Movable Bridge

Station Vicinity

— At-grade: Exclusive Lane

■ ■ ■ Elevated

 Tunnel

Corridor 5

Corridor 6: Westlake/Ship Canal Tunnel

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY

FEATURES AND SERVICE

Cost:

Market St to Downtown Seattle:
\$1,000 - \$1,500 M

85th St to Market St:
Approx \$100 M

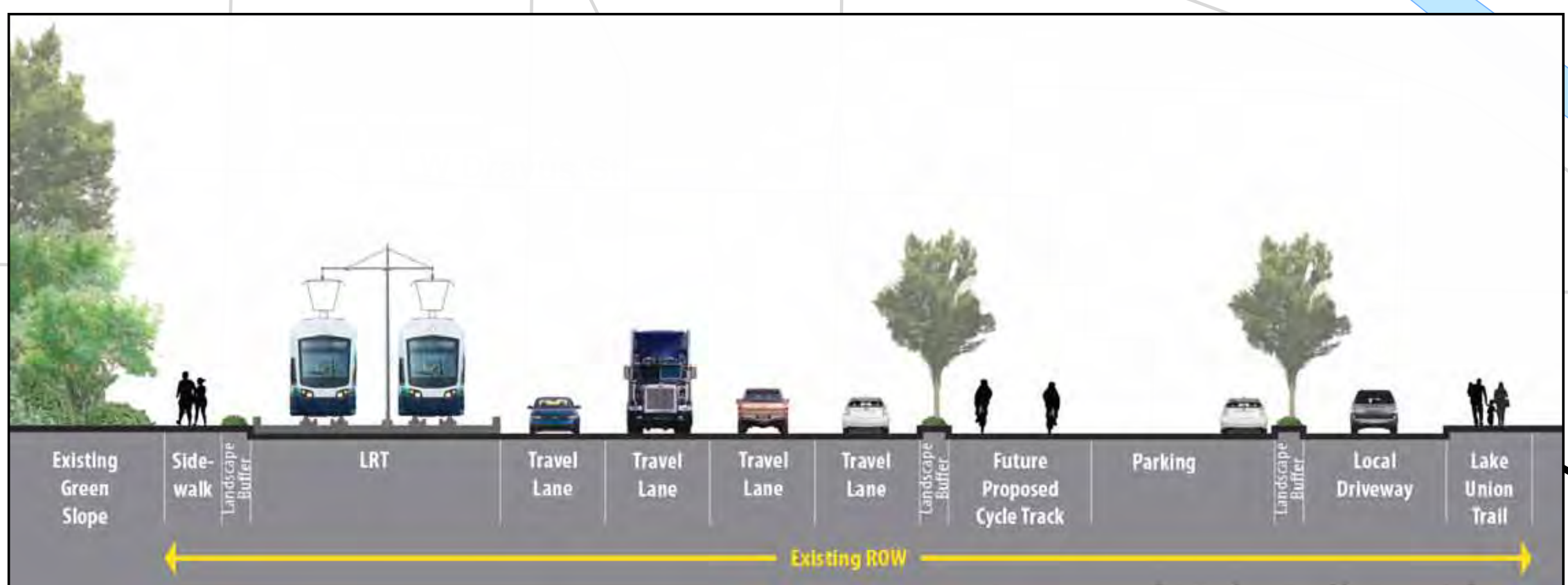
Peak Period Travel Time:

Market St to Downtown Seattle:
14-19 min

85th St to Market St:
Approx 6 min

Ship Canal Crossing:
Tunnel

Ship Canal Crossing:
Tunnel



Magnolia

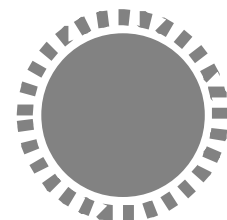
Interbay

Queen Anne

South Lake Union

Bellevue

Downtown



Station Vicinity



At-grade: Exclusive Lane



Tunnel

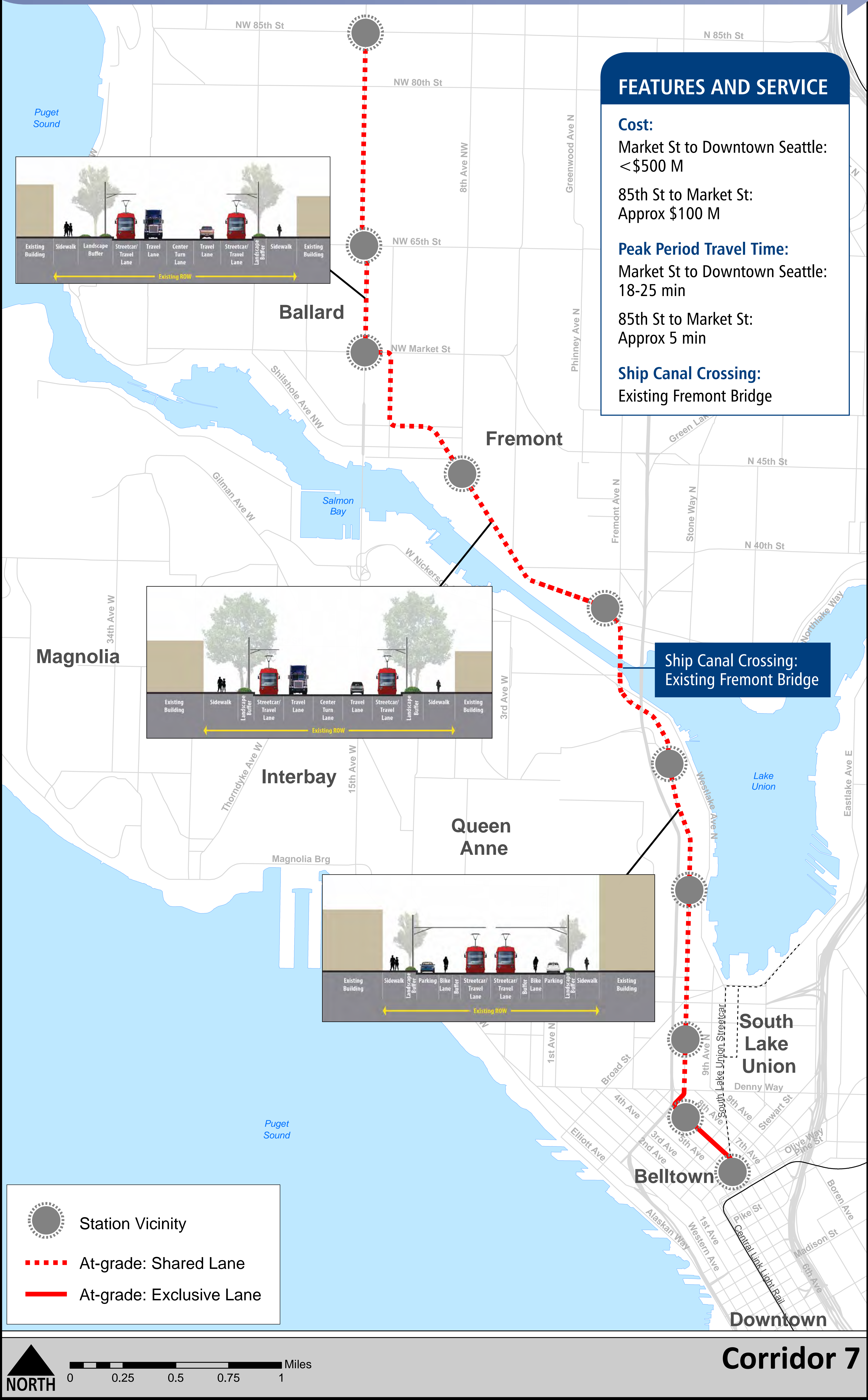


0 0.25 0.5 0.75 1 Miles

Corridor 6

Corridor 7: Dexter/Fremont Bridge

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY



Corridor 8: Westlake/New Bridge

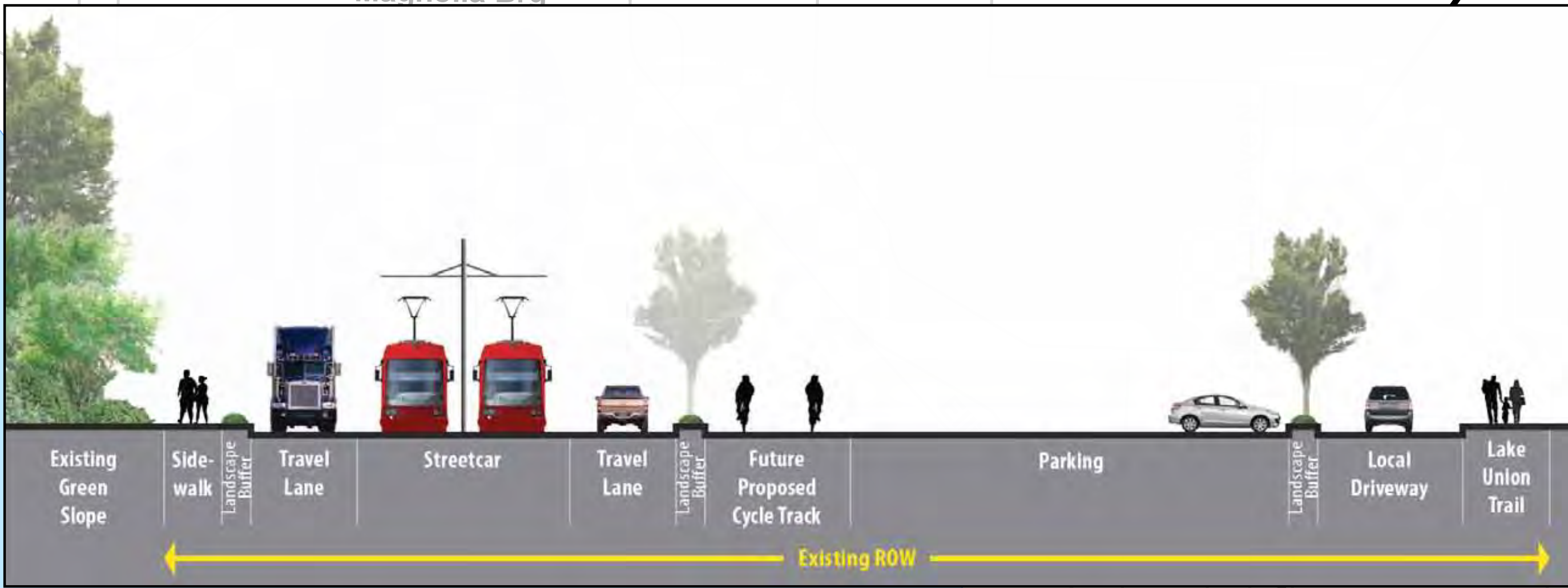
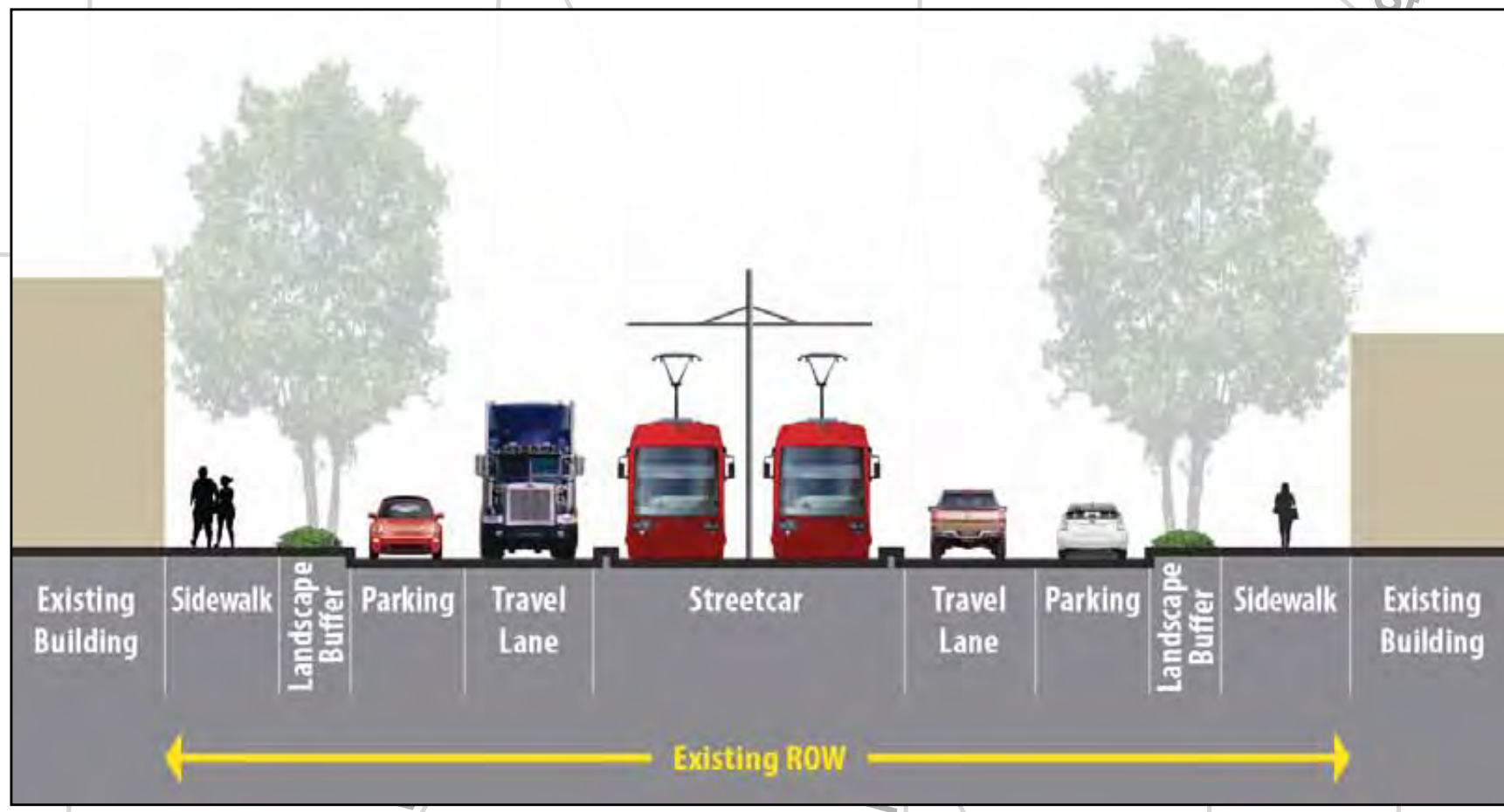
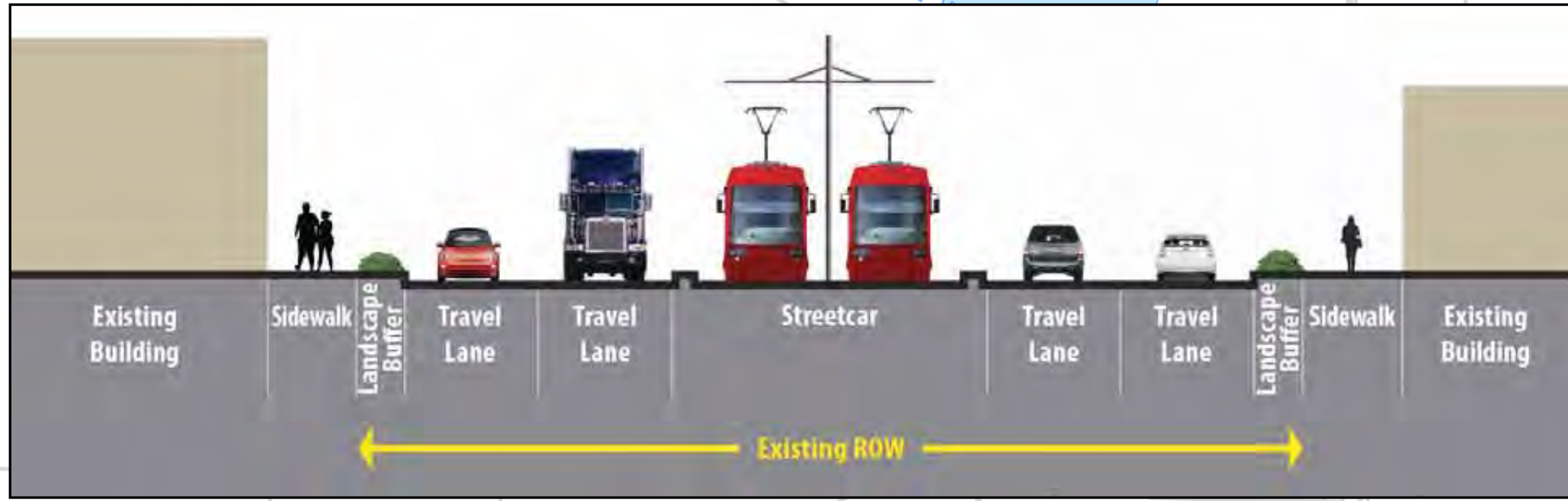
BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY

FEATURES AND SERVICE

Cost:
Market St to Downtown Seattle:
<\$500 M
85th St to Market St:
Approx \$100 M

Peak Period Travel Time:
Market St to Downtown Seattle:
17-24 min
85th St to Market St:
Approx 6 min

Ship Canal Crossing:
70' Movable Bridge



- Station Vicinity
- At-grade: Shared Lane
- At-grade: Exclusive Lane
- Elevated



Corridor 8

Level 1 Analysis and Evaluation Matrix*

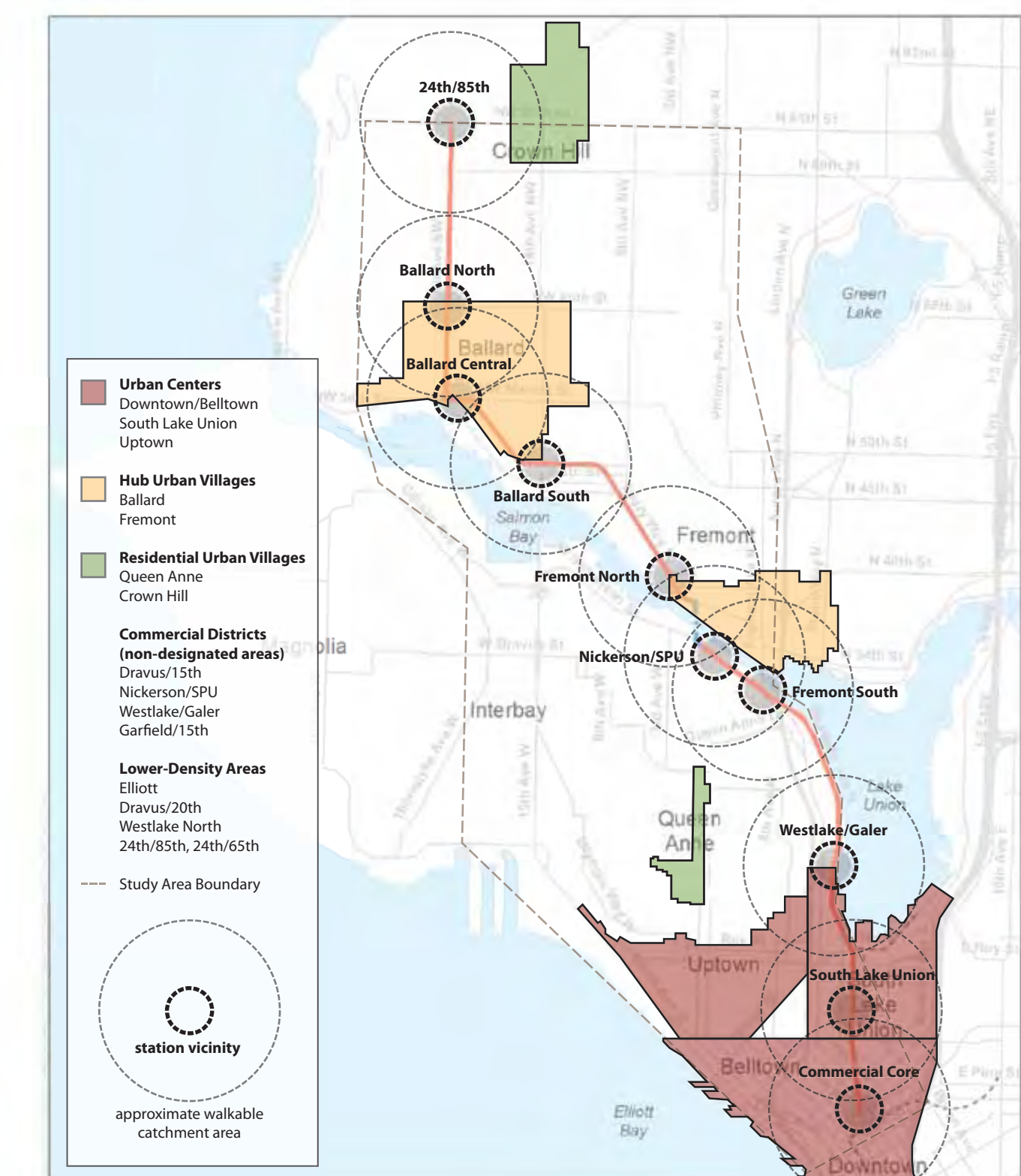
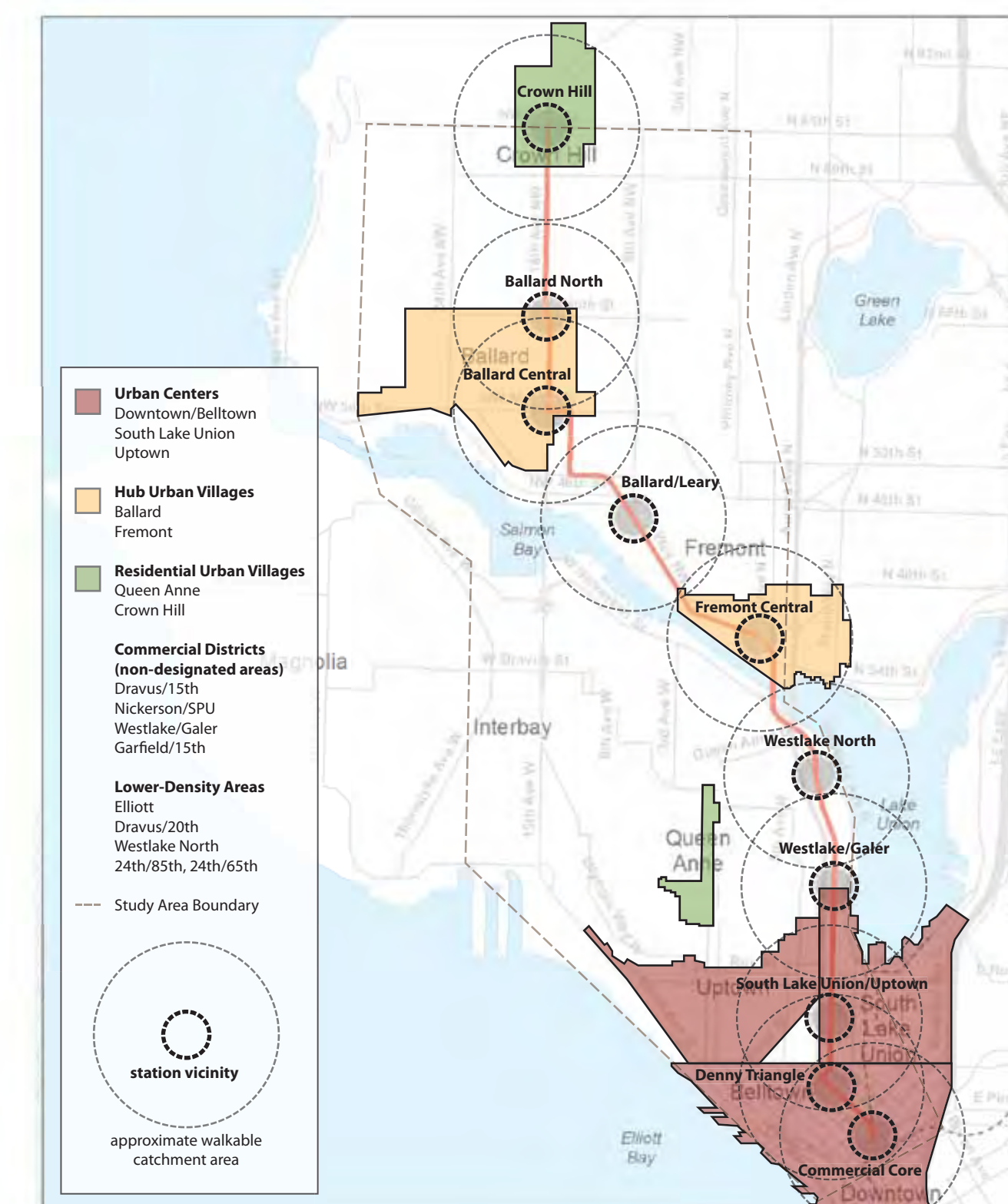
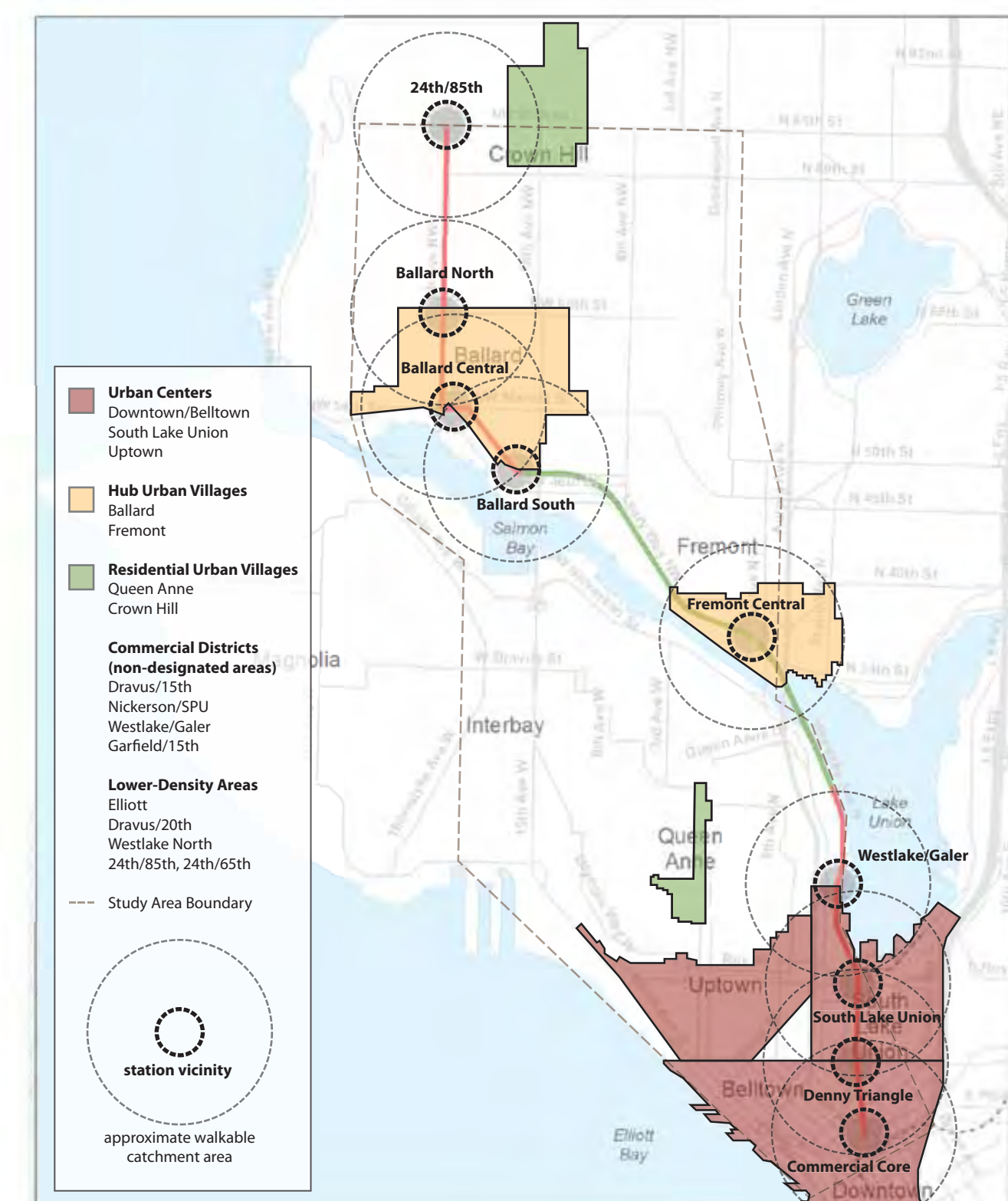
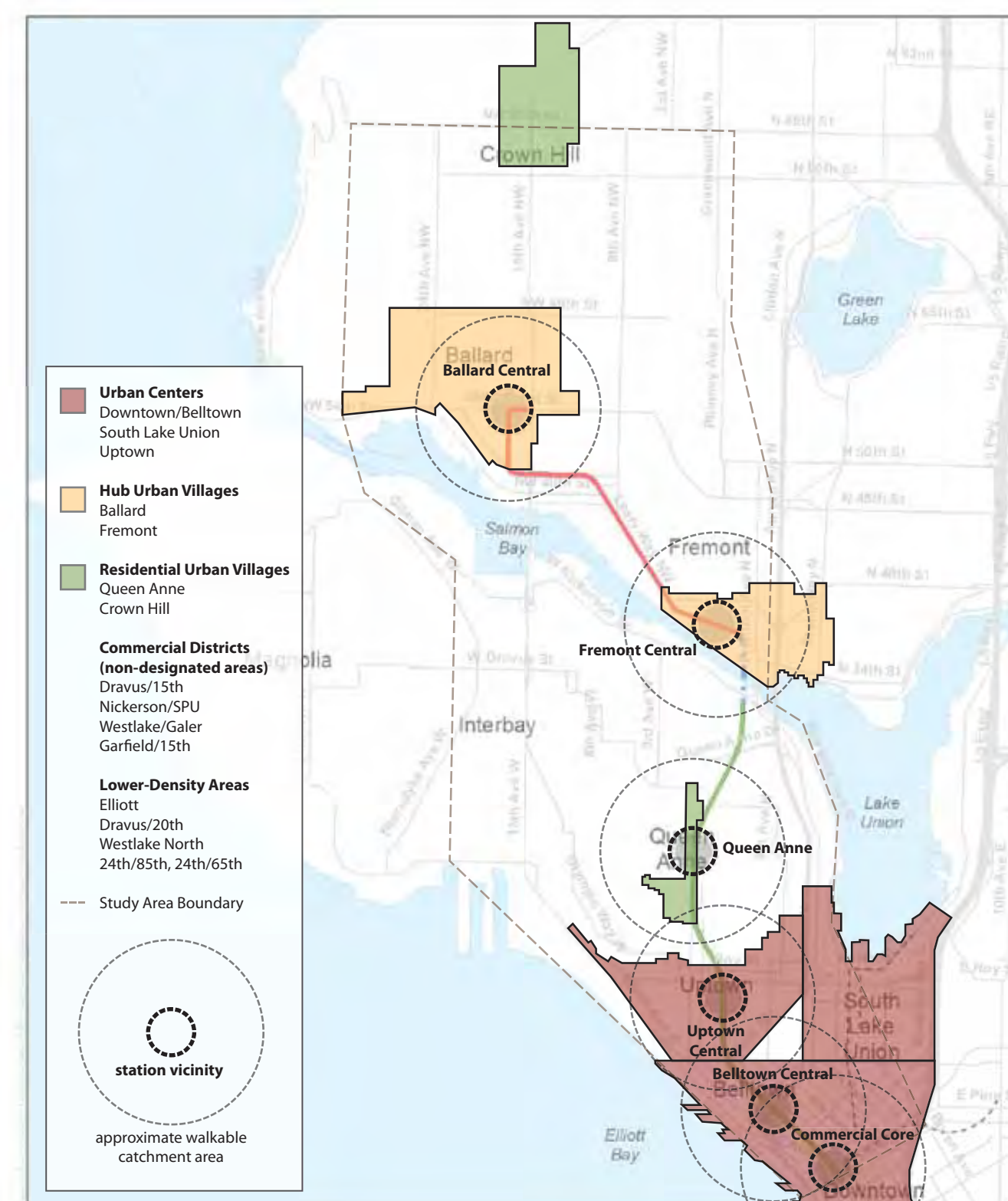
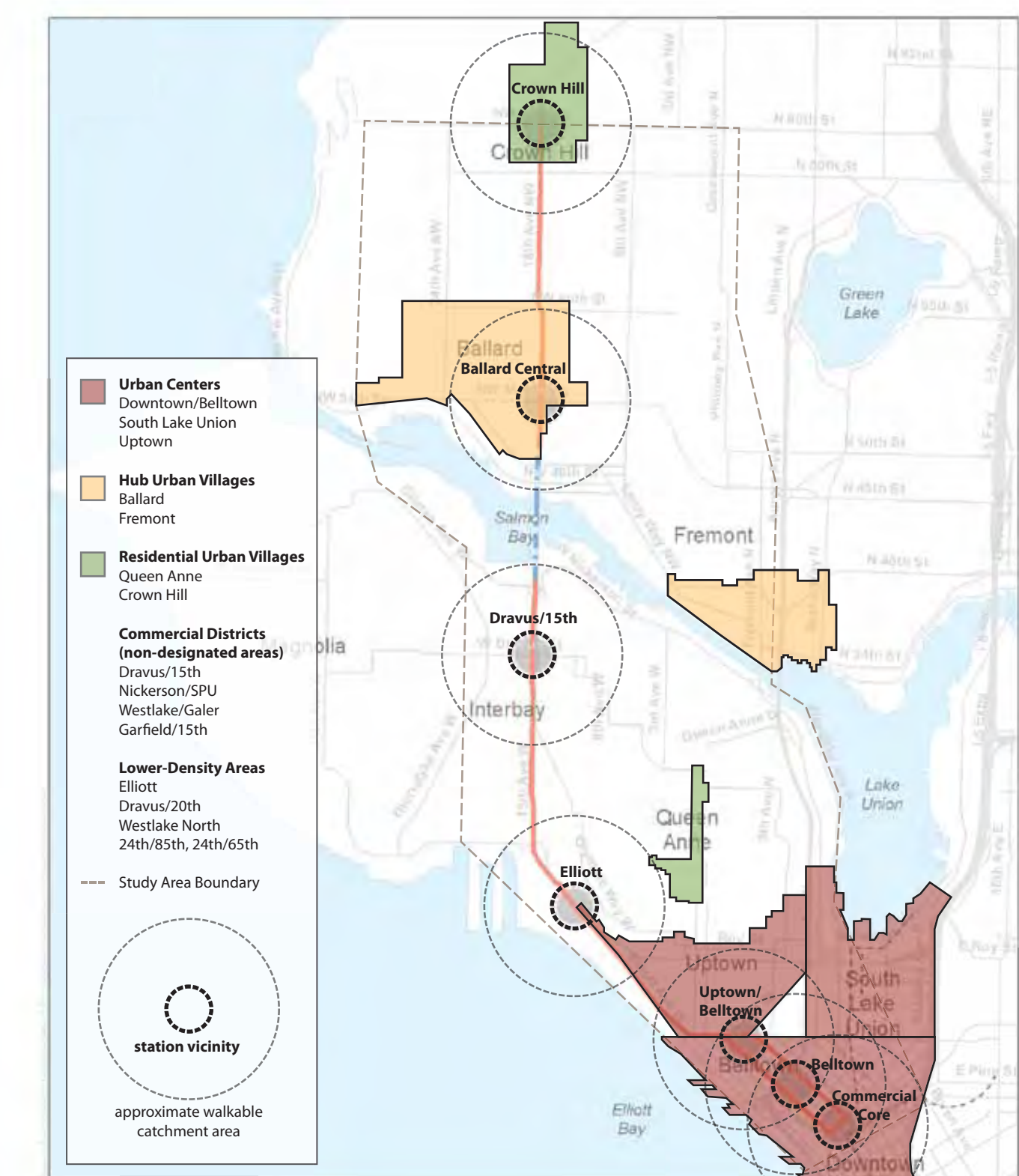
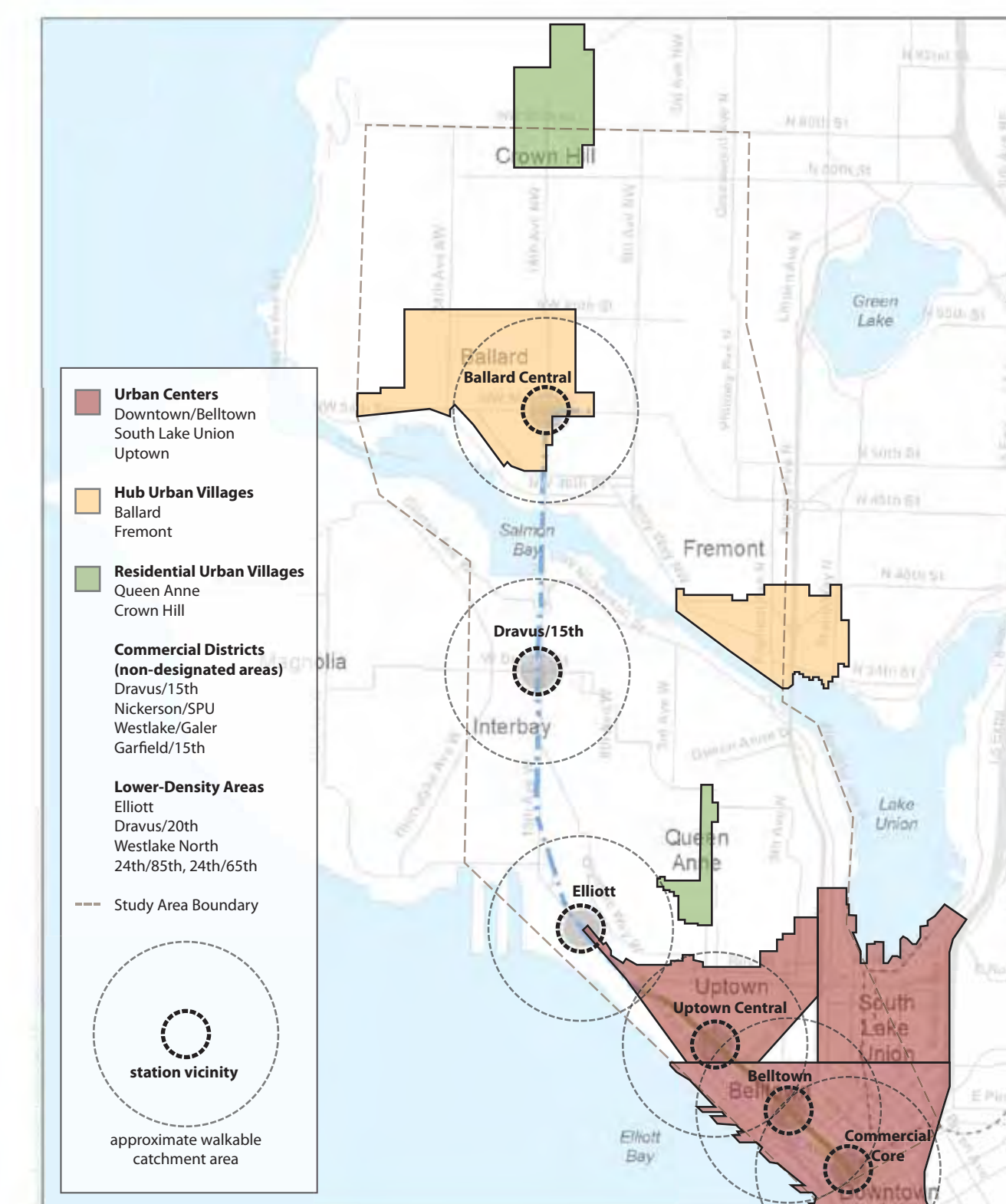
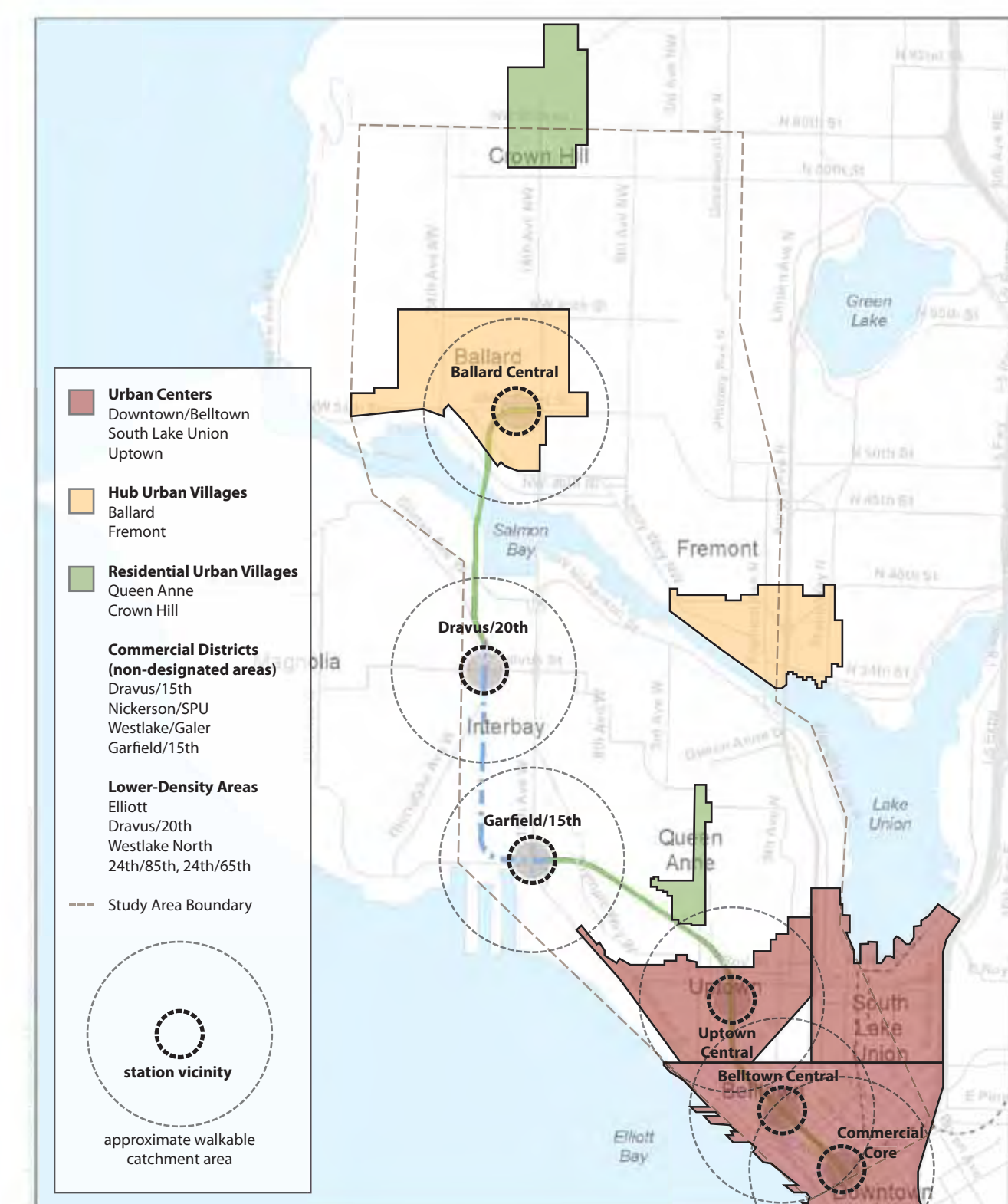
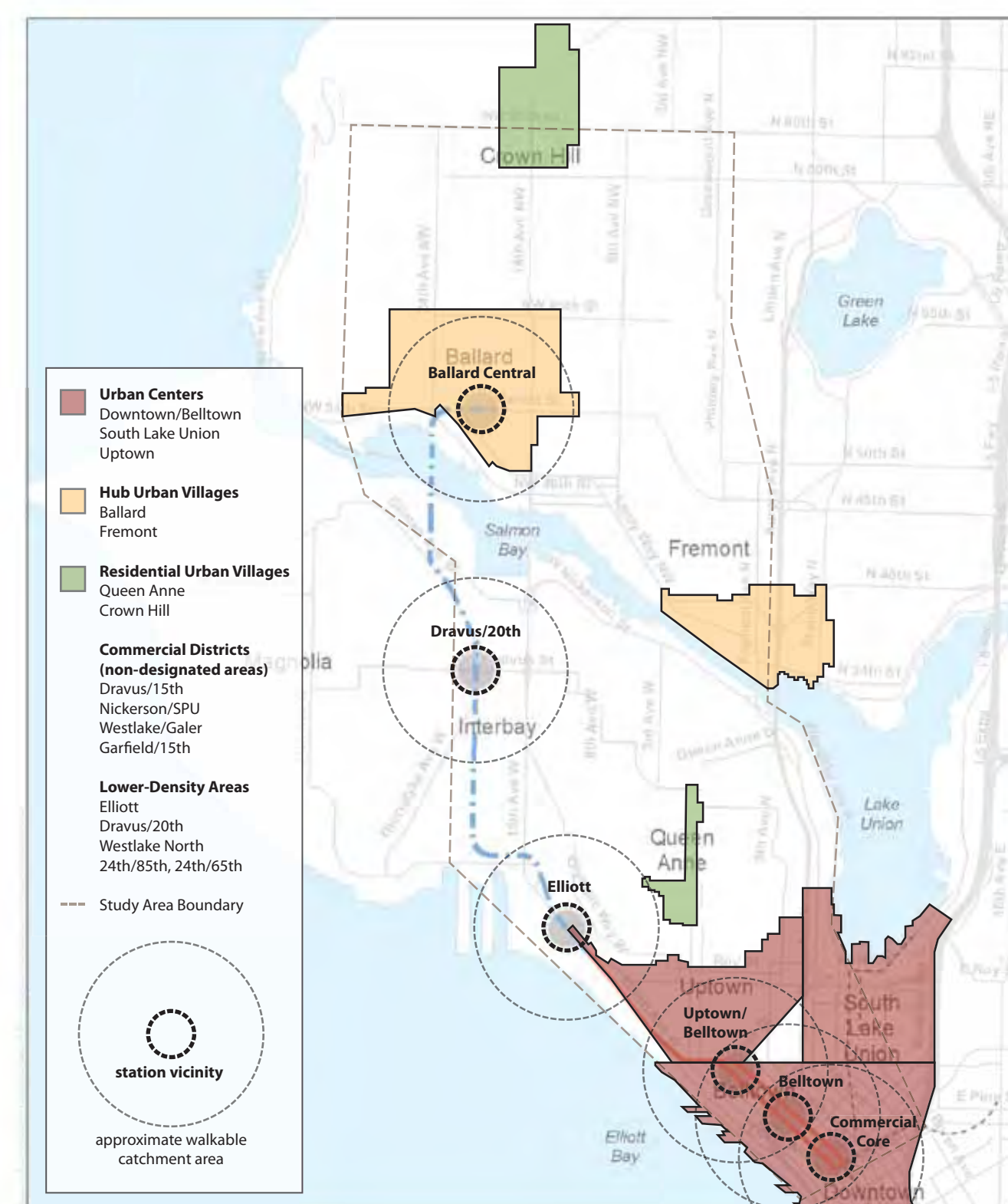
BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY

	1 Interbay West/ New Bridge	2 Interbay West/ Ship Canal Tunnel	3 15 th Avenue/ Elevated	4 15 th Avenue/ At-grade	5 Queen Anne Tunnel	6 Westlake/Ship Canal Tunnel	7 Dexter/ Fremont Bridge	8 Westlake/ New Bridge
► Goal: Increase transit ridership by providing services that are reliable, frequent, and efficient								
Service to key transit travel markets	Ballard, Uptown, Belltown, Downtown	Ballard, Uptown, Belltown, Downtown	Ballard, Uptown, Belltown, Downtown	Ballard, Uptown, Belltown, Downtown	Ballard, Fremont, Upper QA, Uptown, Belltown, Downtown	Ballard, Fremont, SLU, Denny Triangle, Downtown	Ballard, Fremont, SLU, Denny Triangle, Downtown	Ballard, Fremont, SLU, Denny Triangle, Downtown
Number of at-grade signalized intersections traversed	16	0	0	28	10	19	36	27
Reliability of Ship Canal crossing	140' fixed bridge (no openings)	Tunnel (no openings)	140' fixed bridge (no openings)	70' movable bridge (reduced off-peak openings)	70' movable bridge (reduced off-peak openings)	Tunnel (no openings)	Fremont Bridge (off-peak openings)	70' movable bridge (reduced off-peak openings)
Peak period travel time (min) (with no bridge openings)	14–19	12–17	11–16	13–18	15–20	14–19	18–25	17–24
► Goal: Improve mobility options for residents and businesses between Ballard and Downtown Seattle								
Effects on traffic operations (general purpose traffic, freight mobility, local circulation and parking)	Moderately High Impacts	Low Impacts	Low Impacts	High Impacts	Moderate Impacts	Moderate Impacts	Moderately High Impacts	High Impacts
Effects on multimodal mobility (pedestrians, bicycle, and transit)	Moderately High Impacts	Low Impacts	Low Impacts	High Impacts	Moderate Impacts	Moderately High Impacts	Moderate Impacts	Moderate Impacts
► Goal: Support sustainable urban growth								
Opportunity for economic and transit-oriented development	Low	Moderately Low	Moderately Low	Moderately Low	Moderately High	High	High	Moderately High
► Goal: Improve connection to the regional transit system								
Ease of pedestrian connection to Westlake Link station	Moderately High	High	High	Moderately High	High	Moderately High	Moderately High	Moderately High
Connectivity to local bus network	High	High	High	High	Moderate	Moderately Low	Moderately Low	Moderately Low
► Goal: Make efficient use of public financial resources								
Conceptual cost estimate (2013 \$M)	\$750–\$1,000	\$2,500–\$3,000	\$1,500–\$2,000	\$500–\$750	\$2,000–\$2,500	\$1,000–\$1,500	<\$500	<\$500
Conceptual operations and maintenance cost estimate	Low Cost	Low Cost	Low Cost	Moderate Cost	High Cost	High Cost	High Cost	Moderate Cost
Construction challenges of major infrastructure elements	• Bridge over BNSF • 140' bridge over Salmon Bay	• Very long tunnel from CBD to SW Queen Anne via Seattle Center • Bridge over BNSF • Tunnel under Salmon Bay	• Long tunnel from CBD to SW Queen Anne • Elevated 15th Ave guideway • 140' bridge over Ship Canal	• 70' movable bridge	• Very long tunnel from CBD to Nickerson • Deep tunnel station under QA • 70' movable bridge	• Tunnel under Lake Union	• Use existing Fremont Bridge	• 70' movable bridge
Potential conflicts with major water, sewer, and power utilities	Moderate Conflicts	Moderately High Conflicts	Moderate Conflicts	Moderately High Conflicts	High Conflicts	Moderately High Conflicts	Moderately High Conflicts	Moderately High Conflicts
Potential availability and ease of access to maintenance and storage facility	North Port: High	North Port: High	Interbay/15th: Moderate	Interbay/15th: Moderate	Leary: Low	Leary: Low	Leary: Low	Leary: Low
► Goal: Preserve and enhance the environment								
Potential visual and natural environment impacts	Moderately High Impacts	Moderately Low Impacts	Moderately High Impacts	Low Impacts	Moderately Low Impacts	Low Impacts	Low Impacts	Moderately Low Impacts
► Goal: Provide equitable access for residents and businesses								
Number of census tracts served with medium and high concentrations of zero-car households	6	7	6	6	8	8	8	8

*Analysis for Downtown Ballard (Market Street) to Downtown Seattle

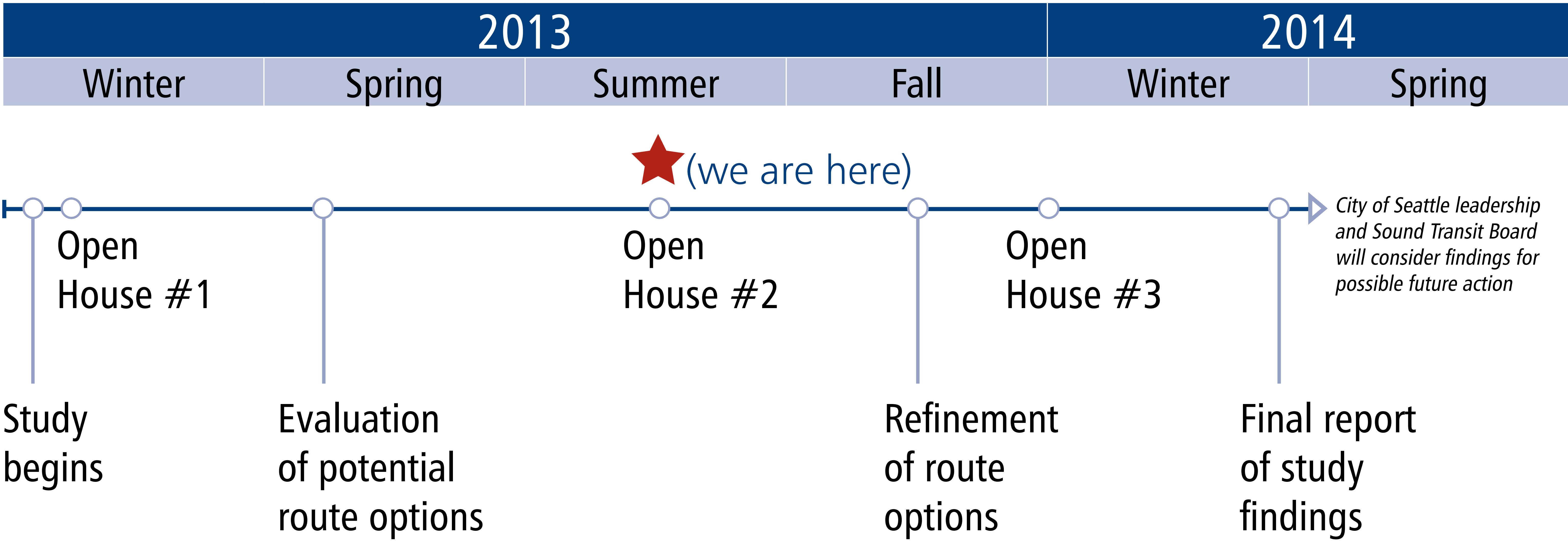
Opportunity for Economic and Transit-Oriented Development

BALLARD TO DOWNTOWN SEATTLE TRANSIT EXPANSION STUDY



Study Timeline and Process

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*Schedule is subject to change